

Appl. No. : 10/618,900
Filed : July 14, 2003

REMARKS

Claim 1 has been amended to clarify the invention. Claim 25 has been added which is a claim obtained by rewriting and clarifying previous claim 1. No new matter is included. Applicant respectfully requests entry of the amendments and reconsideration of the application in view of the amendments and the following remarks.

Rejection of Claims 1-7, 9-11, and 22-24 Under 35 U.S.C. § 103

Claims 1-7, 9-11, and 22-24 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over US 5,447,568 (Hayakawa) and US 5,785,796 (Lee) in view of Vincent US 5,953,634 (Kajita). Claim 1 is independent and has been amended to clarify the invention. Applicant respectfully traverses this rejection.

Applicant understands that there is the possibility that a gas condenses on a surface of Hayakawa's gas ratifying plate, and in that case, the plate may function as an evaporation plate. However, in order to combine Hayakawa and Kajita, there still has to be a suggestion or motivation to do so. Because Hayakawa is silent about the possibility, one of the ordinary skill in the art could not be motivated to use Kajita's evaporation plate substituting Hayakawa's gas ratifying plate. Applicant also understands that the apparatus must be different from the prior art structurally, not operationally or functionally. However, with regard to a motivation to combine, it is well settled that if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) In the present case, the clear intended purpose of Hayakawa's gas ratifying plate is to uniformly pass a gas therethrough. Kajita's evaporation plate is convex (and has no holes on its convex surface). If Kajita's evaporation plate is used in Hayakawa, gas flow cannot be ratified and the structure is inoperable for the purpose of gas ratification. Thus, a motivation to combine could not be found in Hayakawa or Kajita.

Additionally, Kajita's evaporation plate is convex toward the shower plate (42), not toward the bottom. If the device is turned upside down, the bottom can be a ceiling. However, even in that case, the evaporation plate is convex toward the shower plate and concave toward the ceiling. In claim 1, the convex surface faces the ceiling (i.e., the plate is convex toward the

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ceiling, not toward the shower plate). Thus, even if the teachings of Hayakawa and Kajita are combined, claim 1 is still structurally different from the combined structure.

Lee's teachings are similar to those of Hayakawa. Thus, in view of the foregoing, previous claim 1 could not be obvious over the prior art of record. However, in order to expedite prosecution of claim 1, Applicant has amended claim 1 to recite "said vaporization surface having pores distributed exclusively in the vicinity of its outer periphery" (e.g., Fig. 2A). None of the prior art of record teaches or even suggests a vaporization surface having pores distributed exclusively in the vicinity of its outer periphery. Thus, for this additionally reason, it is respectfully submitted that claim 1 is patentable over the prior art of record. At least for this reason, the dependent claims also patentable over the prior art of record.

Rejection of Claim 8 Under 35 U.S.C. § 103

Claim 8 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Hayakawa, Lee, Kajita in view of Strang (US 2004/0129217). Claim 8 depends from Claim 1. Strang is irrelevant to the features of Claim 1. Thus, a combination of the above references could not render Claim 1 obvious, and at least for this reason, Claim 8 also could not be obvious. Applicant respectfully requests withdrawal of this rejection.

New claim

Claim 25 has been added which recites "an evaporation plate for vaporizing said liquid raw material, which is disposed downstream of the orifice and upstream of the shower plate in a space between said ceiling of said reaction chamber and said shower plate, said evaporation plate having a vaporization surface which is a convex surface facing the ceiling of the reaction chamber, having a center under the orifice, and extending outward from the center in a downstream direction toward an outer periphery of the shower plate, said vaporization surface having pores distributed in the vicinity of its outer periphery which is disposed close to the outer periphery of the shower plate." The above structural features are not taught or suggested by the prior art of record. As discussed above, Kajita's evaporation plate is convex toward the shower plate, not toward the ceiling and further does not have pores in the vicinity of its outer periphery.

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Further, in the structures recited in claim 25, even if a liquid material is used, gas flow can be very accurately controlled as shown in Fig. 4A. This surprising effect could not be reasonably expected from the prior art of record. Claim 25 could not be obvious over the prior art of record.

CONCLUSION

In light of the Applicant's amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

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By: 

Katsuhiro Arai
Registration No. 43,315
Attorney of Record
Customer No. 20,995
(949) 760-0404

2804245
080306